WORD PROCESSING FEASIBILITY
STUDY (SUGGESTED FORMAT FROM NARS)

Requiring office must develop for OSD approval. CIMS should do this — rest of Agency do completing.

Word Processing Feasibility Study (Suggested Format)

NARS Archives Requirements Study

1.0 Introduction

The introduction describes the background of the request and should address the following items: requesting office, organizational components being investigated, reason study is being performed, previous studies conducted, and study team members.

1.1 Missions and Objectives

The missions and objectives stated should be related to word processing activities. A brief description of the types of documents along with a statement of office policy relating to the preparation, review, and distribution should be included.

1.2 Typing Task Descriptions

The typing workload should be grouped into major categories (correspondence, forms, charts, statistics, reports, regulations, and etc.) for reporting purposes. A detailed description of each category should be provided and include the following items: average number of pages per document, average number of retypes per document, reviewing and editing procedures, timeliness of output, and other unique characteristics. Sample output copies may be provided for inspection as necessary for clarification.

1.3 Current System

This section should describe how the current workload is being accomplished. The number, type, and location of present workstations should also be included. In addition, the following items: inter and intra office coordination and communication requirements, special security considerations, availability and use of "borrowed equipment", and special clerical/typists skills.

1.4 Problems

This section should provide precise problem definition for which the proposed solution is to alleviate. The problem areas may include: increased and/or new workload, excessive overtime, backlogs of work, unacceptable quality of output, poor turnaround time, excessive amount of retyping, inability to perform required changes, and expected reduction in clerical force. Sample documentation may be provided to illustrate problem areas.

2.0 Requirements

This section identifies the minimal, highly desirable, and desirable requirements necessary to support the typing workload. The system configuration (standalone single station, standalone clustered stations with shared printer, shared logic system system, or central online access) should be described in full detail.

The Word Processing Requirements Checklist (Attachment A) may be used to indicate editing, storage, printing, and interface requirements. Additional requirements and clarification may also be included.

3.0 Alternative Solutions

It is now possible to determine the suitable technology (magnetic card, video display, or central services), given the stated requirements and problems. A statement of the above technologies should describe the apparent shortfalls and prominent features in meeting the customer's needs.

Upon determination of the appropiate technology, Agency approved equipment can then be evaluated. A statement of each system considered should include: order of preference, advantages and disadvantages, potential in meeting requirements and alleviating problems, expected benefits, and estimated savings.

4.0 Cost Analysis

The cost analysis when considering word processing equipment is performed in two (2) steps: by determining the annual typing workload, and by determining the estimated annual personnel and machine cost. The cost analysis is required by GSA legisation (Bulletin B-36) for the installation of each piece of word processing equipment.

4.1 Annual Typing Workload

An inspection of the current workload is required to estimate the overall annual typing workload. Statistics are gathered for each component's major typing category (see Section 1.2) and recorded onto the Annual Typing Workload Form (Attachment B). Data may be collected in several ways including:

a. Interviews - This method should be considered for small (1 to 3 stations) where the typists can provide reasonable estimates.

b. Inspections - This method should be considered for small to medium (1 to 5 stations) where the typists cannot provide reasonable

estimates but where an inspection of the office's chronological files represent a reasonable account.

c. Typing Logs - This method should be used where neither of the above methods are deemed suitable or where an accurate accounting is desired. Data samplings may be collected during a 1 to 2 week period and projected into a yearly estimate. The Typing Log Worksheets (Attachment C) may be used to record the necessary data for determining the annual typing workload.

4.2 Personnel and Machine Cost

This section is used to project the estimated resource requirements (personnel and machine) and provides the basis for justifying word processing equipment. A cost analysis of the current system and each viable alternative solution should be included for cost comparison purposes. The Word Processing Cost Analysis Form (Attachment D) may be used to determine the overall cost effectiveness. The formulas have been derived from the National Archives and Records Service (NARS) handbook and modified for Agency needs. NARS is the GSA consultant for all government agencies for the development of procedures for conducting word processing feasibility studies.

Please indicate the following requirements:

R - Required
HD - Highly Desirable
D - Desirable
NA - Not Applicable

(choose one)

	(R)	(HD)	(D)	(NA)
1. System Configuration				
Standalone				
Single Station w/printer. _____ terminals				
Dual Station w/shared printer. _____ terminals				
Shared Logic.				
_____ terminals				
_____ printers				
Online Central Facility. _____ terminals				
Other (please specify) _____				
_____				
_____				
_____				
2. Text Editing				
Adjustable Margins				
Automatic Centering				
Automatic Footnoting				
Automatic Formatting				
Automatic Hyphenation				
Automatic Outlining				
Automatic Pagination				
Automatic Underlining				
Automatic Widow/Orphan Control				
Automatic Word Wraparound				
Block Text Copy				
Character Insert/Delete				
Column Insert/Delete/Move				
Document Oriented (docs 4 pages or more)				
Global Search				
Global Search with Replace				
Horizontal Scrolling. _____ chars per line				
Line Insert/Delete/Move				
Multiple Headers and Trailers. _____ levels				
Page Oriented (docs 4 pages or less)				
Paragraph Insert/Delete/Move				
Phrase Dictionary				
Recorded Tabsettings				
Flush Left				
Flush Right				
Decimal				
Dot Leadering				
Skip to Given Page				

Please indicate the following requirements:

R - Required
HD - Highly Desirable
D - Desirable
NA - Not Applicable

(choose one)

Text Editing (cont.)

	(R)	(HD)	(D)	(NA)
Skip to Given Text				
Vertical Scrolling. _____ pages				
Word Insert/Delete				
Other (please specify) _____				
_____				
_____				
_____				
_____				

3. Software Options

Automatic Glossary Index				
Automatic Table of Contents				
Compute Sub and Final Totals				
Display Scientific Equation Symbols				
Forms Fill-In and Print				
Index/Glossary of Stored Documents				
Merge Stored "boiler plate" Data				
Merge Keyboarded Text with Stored Data				
Perform Basic Row/Column Mathematical Operations				
Perform Records Management Functions (file definition, select, and sort)				
Store/Retrieve Previously Stored Data				
User Prompt Driven				
Other (please specify) _____				
_____				
_____				
_____				
_____				

4. Storage and Recording

Single Diskette				
Dual Diskette				
Magnetic Card				
Magnetic Tape				
VM/CMS Mini Disk				
Other (please specify) _____				
_____				
_____				
_____				
_____				

Please indicate the following requirements:

R - Required D - Desirable
HD - Highly Desirable NA - Not Applicable

	(choose one)			
	(R)	(HD)	(D)	(NA)
5. Printing				
Local High Quality. _____ carbons				
Background Printing Mode				
Multiple Character Sets per Pass. _____ sets				
Type Fonts (specify: _____ _____)				
Character Pitch (specify: _____ _____)				
Print Queue. _____ documents				
Proportional Printing for Flush Right Margins				
Variable Spacing for Super and Subscripts				
Other (please specify) _____ _____ _____ _____ _____				
6. Interface				
ODP's VM/CMS Facility				
OC's Cable Dissemination System (CDS)				
OL's Computer Output Microform (COM)				
OL's Electronic Text Editing and Composing System (ETECS)				
ODP's Online IBM System 6670 Printer				
ODP's Online Xerox 9700 Printer				
Other (please specify) _____ _____ _____ _____ _____				

Glossary of Terms

ADJUSTABLE MARGINS - The ability to perform margin changes by a single command, automatically changing line endings without further intervention.

ARITHMETIC/MATHEMATICAL OPERATIONS - The ability of a word processing system to be used as a calculator or adding machine. Some systems have the ability to compute sub and final totals and to perform basic row and column operations.

AUTOMATIC CENTERING - The ability to automatically center a word or text segment between margins or on some some systems between tab settings for centering column headings.

AUTOMATIC FOOTNOTING - The ability to tie footnotes to appropiate text segments. If the text segment is moved to another page or document, the footnote will travel with it.

AUTOMATIC FORMATTING - The ability to automatically align data in a pre-determined format, between left and right margins, or on tabset boundaries.

AUTOMATIC GLOSSARY INDEX - The ability to identify words or phrases which are to appear as an index along with page numbers following the printed documents.

AUTOMATIC HYPHENATION - The ability to perform line ending decisions and to insert super imposed breaks in long or complicated words at input time and during document formatting/reformatting time.

AUTOMATIC OUTLINING - The ability to define up to six (6) levels of indentation with automatic formatting and numbering of textual data.

AUTOMATIC PAGINATION - The ability to take a multi-page document and divide it into pages of a specified length (in number of lines) and to automatically generate page numbers.

AUTOMATIC TABLE of CONTENTS - The ability to identify words or phrases which are to appear along with page numbers in a directory preceeding the printed document.

AUTOMATIC UNDERLINING - The ability to indicate the beginning and ending of an underline by a code, rather than backspacing and underlining on a character-by-character basis.

AUTOMATIC WIDOW/ORPHAN CONTROL - The ability of a word processor to automatically prevent the first line of a paragraph, or a title or heading, from printing on the last line of a page. The system also prevents a last line from being the first line of a new page.

AUTOMATIC WORD WRAPAROUND - The ability of a word processor to automatically place a word which does not fit onto the line being typed onto the next line without the operator having to depress a "return" key.

BACKGROUND PRINTING - The automatic execution of a print function simultaneous to the keyboarding or editing of another document.

BLOCK TEXT COPY - The ability to designate a block of text, and to move it within the document or to another document.

CHARACTER PITCH - Horizontal character spacing at 10, 12 or 15 characters per inch.

COLUMN INSERT/DELETE/MOVE - The ability to designate a column of data and to delete, or move that block of text. Additional columns of data can be inserted into the pre-determined text.

DECIMAL ALIGNMENT - The ability to align columns of decimal figures on the decimal point.

DELETE/INSERT/MOVE - The ability to delete, insert and move characters, words, lines, sentences, paragraphs and blocks of text.

DOCUMENT ORIENTED SYSTEM - The ability to process a multi-page document and divide it into pages of a specified length at printing time. This system is usually suitable for documents of four (4) pages or more in length.

DOT LEADERING - The ability fo fill unused left or right positions with a defined character, usually a dot. This is usually used for a table of contents.

DUAL STATION - A word processor configuration usually made up of two keyboards or video displays, two mag card/tape readers or diskettes, and one printer.

FLUSH LEFT - A term that describes a block of text that has an evenly justified left margin.

FLUSH RIGHT - A term that describes a block of text that has an evenly justified right margin.

FORMS FILL-IN and PRINT - The ability to record data onto a pre-printed form by spacing automatically from one field to another.

GLOBAL SEARCH - The ability of a system to search for repeated occurences of a character string.

GLOBAL SEARCH and REPLACE - The ability of a system to search for repeated occurrences of a character string and automatically delete all occurrences or replace all occurrences with another string.

HORIZONTAL SCROLLING - The ability of a display-based system to move horizontally along a line of text to access more characters than may be shown on the screen at one time.

INDEX - A list of documents contained on a unit of storage media (e.g., a diskette).

MERGE - A word processing feature by which a system can assemble new documents from previously recorded text. Most systems can combine prerecorded text with keyboarded text.

MULTIPLE HEADERS and TRAILERS - The ability to place multiple lines of text at the top and bottom of each page of a multi-page document.

ONLINE CENTRAL FACILITY - A word or data processing operation which is performed on a local system connected to and sharing the facilities of a remote central processor.

PAGE ORIENTED SYSTEM - The lack of the ability to automatically divide a multi-page document into pages of a specified length. Each page must be controlled by the operator. This system is used generally for documents of four (4) pages or less.

PHRASE DICTIONARY - The ability to define abbreviated codes which can be expanded into clear text: e.g.; ODP expanded to Office of Data Processing.

PRINT FONT - A character set in a particular style and size of type, including all alpha characters, numbers, punctuation marks and special symbols.

PRINT QUEUE - A feature which allows for a number of documents to be lined up for subsequent printout while the operator goes on to perform other tasks.

PROPORTIONAL SPACING - Typed, printed, or displayed text where each alphanumeric character is given a weighted amount of space. For instance, an "I" might be two units wide, an "L" four units wide and a "W" five units wide.

RECORDS MANAGEMENT - The ability of a word processing system to create files of information which may be manipulated, selected, sorted, and reported from massaged fields of data.

SHARED LOGIC - A multi-terminal system where each terminal shares the word processing power, storage and peripherals of a central computer.

SINGLE STATION - A word processor configuration usually made up of a keyboard, or video display, mag card/tape reader or diskette, and a printer.

SKIP - The ability to locate text by a specified page or character string.

STANDALONE - A word processor such as a mag keyboard or video display system which does not share the processing power of a central computer.

USER PROMPTS - A reminder(s) usually implemented via display that assists the word processing operator in performing a function.

VERTICAL SCROLLING - The ability to move vertically, one line at a time, up and down through one or more pages of text.

VERTICAL SPACING - The ability of a word processing system to print or display in increments of spacing for functions such as super and subscripts.

Estimated Annual Typing Workload

Name: _____ Ext: _____ Date: _____
Off/Div: _____

(please specify category of typing task)

Data Elements	(a)	(b)	(c)	(d)	(e)
1. Documents per year					
2. Pages per document					
3. Lines per page					
4. Retypes per document					
5. Lines changed per page					
==========	=======	=======	=======	=======	=======
6. Original pages per year (line 1 x line 2)					
7. Original lines per year (line 6 x line 3)					
8. Revised pages per year (line 6 x line 4)					
9. Revised lines per year (line 8 x line 5)					
10. Total lines per year ((line 6 + line 8) x line 3)					
11. Original/Revised lines per year (line 7 + line 9)					
12. Repetitive lines per year (line 10 - line 11)					

Estimated Annual Typing Workload

Instructions

An Estimated Annual Typing Workload Form should be prepared for each component being investigated. Background data gathered for each component (see Section 4.1) is recorded onto lines 1 - 5 and is used to compute the projected annual workload in lines 6 - 12. The original/revised lines (line 11) and repetitive lines (line 12) are the basis for determining the cost effectiveness of a word processing solution per component.

Data relating to each major category is recorded as follows:

Line 1- Enter the number of finished documents produced per year. Ensure that those less frequently produced documents are included.

Line 2- Enter the average number of pages per document.

Line 3- Enter the average number of lines per page.

Line 4- Enter the average number of retypes per document.

Line 5- Enter the average number of lines containing at least one change per retype.

Line 6- Compute the number of finished pages per year.
(line 1 times line 2)

Line 7- Compute the number of finished lines per year.
(line 6 times line 3)

Line 8- Compute the number of revised pages per year.
(line 6 times line 4)

Line 9 - Compute the number of revised lines per year.
(line 8 times line 5)

Line 10- Compute the total lines typed per year.
((line 6 plus line 8) times line 3)

Line 11- Compute the total original/revised lines per year.
(line 7 plus line 9)

Line 12- Compute the total repetitive lines per year.
(line 10 minus line 11)

Note: The sum of lines 11 and 12 (a - e) are used to determine the cost effectiveness (see Attachment D) of word processing solution(s).

Daily Typing Log

Name: _____ Ext: _____ Date: _____

Off/Div : _____

Task No.	Specify Report Category	Number Typed Lines	Repetitive/Revised Chgd	Unchgd	Min/Maj	Time Mins	Equipment Type	Loc
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

Daily Typing Log

Instructions

This data collection instrument is used to record the typing workload in each major typing category. Data collection is usually conducted over a two week period supplemented by estimates of those tasks not performed during the collection period. The overall typing workload for the office is computed using the recorded data and posted on the typing task workload data collection instrument as described in Attachment B.

1. Name. Enter your name, office, extension, and date for contact purposes.

2. Task No. Record an entry for each typing task.

3. Report Category. Enter the category of the typing task as instructed by your office representative.

4. Typed Lines. Enter the total number of lines for each task.

5. Repetitive/Revised with Minor/Major Changes. Enter the total number of lines (changed and unchanged) for each task which is being typed for other than the first time.

Enter the type of revisions;

minor - if changes are made to words, punctuation, and/or sentences and are limited to one or two lines;

major - if changes are made to paragraphs, sections, and/or blocks of text and affect more than two lines or span to the next page.

6. Time. Record the total typing and play-out time (in minutes) for each task.

7. Equipment Used. Specify the type of equipment; selectric typewriter, self-correcting typewriter, Mag Card, Vydec, etc. and its location.

Estimated Annual Personnel Machine/Cost

Name: _____ Ext: _____ Date: _____

Off/Div : _____

	rate	hrs	rate	hrs	rate	hrs
1. Annual Typing Hours Required:						
a. Orig/Rev Lines: _____						
b. Repetitive Lines: _____						
Total Annual Typing Hours						
(lines / rate = hours)						
2. Personnel Required						
(hours / 1,540 = persons)						
3. Personnel Cost						
((salary + 10%) x persons = cost)						
4. Machine Cost (purchase price amortized over 5 years.)						
Specify type, # units, and cost:						
_____						
_____						
_____						
_____						
_____						
_____						
_____						
5. Personnel and Machine Costs						
(line 4 + line 5)						
6. Estimeted Cost Savings						
(current - proposed)						

Estimated Annual Personnel Machine/Cost

Instructions

The Estimated Annual Personnel and Machine Cost Form should be completed for each component being investigated. Data derived from the Estimated Annual Typing Workload Form (Attachment B) is used to determine the cost effectiveness of word processing equipment for each component. An analysis of the current system and each viable solution (Section 3.0) should be prepared for cost comparison purposes.

Line 1 - Annual typing hours required. The annual typing hours is computed by: (1) dividing the number of original/revised lines by the hourly productivity rate, (2) dividing the number of repetitive lines by the hourly productivity rate, and (3) adding the total original/revised and repetitive hours. The following hourly productivity rates represent an average workload with light to medium revisions. These rates may vary depending of the type of equipment used and the nature of the typing workload.

	ETW	Mag Card	Video Display
Original/Revised	188	153	166
Repetitive	236	327	621

Line 2 - Personnel required. The annual typing hours required (line 1) is divided by 1,540 to determine the number of full-time positions. Approximately 1,540 hours are available for productive work per full-time position.

Line 3 - Personnel cost. The average typist salary (plus 1[illegible] for overhead) is multiplied by the number of personnel required (line 2).

Line 4 - Machine cost. The machine cost represents the average purchase price per unit amortized over a five (5) year period. The following prices may be used for costing purposes:

	Purchase	Amortized
CPT 8000I	$ 22,000	$ 4,400
Electric Typewriters	800	160
IBM Mag Cards	8,000	1,600
Lanier LTE-3	12,000	2,400
Lexitron VT1303	24,000	4,800
NBI 3000 dual station	19,400	3,880
NBI 3000 single station	13,900	2,780
Vydec 1400-15	18,000	3,600

Estimated Annual Personnel Machine Cost

The piece of equipment, amortized cost, and number of units required should be included on the form.

Line 5 - Total personnel and machine cost. Sum of lines 3 and 4.

Line 6 - Estimated cost savings. Cost of current system minus the cost of the proposed solution.